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SECRETARY OF THE AIR FORCE**

AIR FORCE POLICY DIRECTIVE 99-1

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Test and Evaluation

TEST AND EVALUATION

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This Air Force Policy Directive (AFPD) establishes broad policy and direction for all Air Force test and evaluation (T&E) activities and organizations, to include the Air Force T&E infrastructure. It implements policies in Department of Defense (DoD) Directive (DoDD) 5000.01, *The Defense Acquisition System*, and DoD Instruction (DoDI) 5000.02, *Operation of the Defense Acquisition System* (collectively called the DoD 5000-series), and DoDD S-3325.01, *Foreign Materiel Program (U)*. This AFPD applies to all Air Force organizations that plan and/or conduct T&E activities, including the Air National Guard and Air Force Reserve Command. This publication may not be supplemented or further implemented or extended.

Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW the Air Force Records Disposition Schedule (RDS) located in the Air Force Records Information Management System (AFRIMS). Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate chain of command.

SUMMARY OF CHANGES

This AFPD has been completely revised in content and format and must be completely reviewed.

1. Overview. This AFPD establishes overarching Air Force test and evaluation (T&E) policy to ensure T&E is fully and effectively integrated throughout the Defense acquisition system. The fundamental purpose of T&E is to provide knowledge to assist in managing the risks involved in developing, producing, operating, and sustaining systems and capabilities. T&E expertise must

be brought to bear at the beginning of the system life cycle to provide earliest awareness about the strengths and weaknesses of the system under development. The goal is early identification of technical, operational, and system attributes and deficiencies, so that appropriate and timely corrective actions can be developed prior to production and fielding of the system, if required. The ultimate goal is to ensure the weapon systems and support systems the Air Force acquires and maintains meet operational capability requirements.

1.1. Integrated Life Cycle Management (ILCM). ILCM is the acquisition and sustainment framework for all Air Force acquisition programs. It describes a seamless governance with transparent processes that integrate all aspects of infrastructure, resource management, and business systems necessary for successful development, testing, acquisition, fielding, sustainment, and disposal of systems, subsystems, end items, and services to satisfy validated warfighter capability needs. The T&E community is a key stakeholder in the ILCM framework and works in concert with leadership, developers, acquirers, integrators, users, and sustainers to ensure success.

1.2. Categories of Testing. Air Force testing falls into two overarching categories, developmental testing (which includes live fire test and evaluation) and operational testing. Integrated testing is not a separate category, but a concept for test management. Integrated testing is the collaborative planning and collaborative execution of test phases and events to provide shared data in support of independent analysis, evaluation and reporting by all stakeholders.

2. Policy. Air Force T&E policy applies to any Air Force organization whose mission includes T&E roles and responsibilities.

2.1. T&E activities shall:

2.1.1. Be conducted to reduce program risk by identifying and helping to resolve design deficiencies as early as possible and throughout the acquisition process.

2.1.2. Be structured to provide essential information to decision makers and determine whether systems are operationally effective, suitable, survivable, and safe for intended use. T&E results will inform the decision process before proceeding beyond low-rate initial production and/or fielding.

2.1.3. Support the modification, upgrade, and continued sustainment of fielded systems.

2.1.4. Be objective, unbiased, and free from outside influences. Objectivity is significantly enhanced when test organizations, both developmental and operational, report through a separate chain of command than the developing organization.

2.1.5. Use integrated testing concepts to the maximum extent practical.

2.1.6. Provide T&E expertise and insight to acquisition professionals and requirements developers to help ensure user-provided operational requirements and concepts are clear and testable prior to program initiation.

2.1.7. Use only verified, validated and accredited modeling and simulation tools when appropriate to assess performance, reduce risk, or mitigate resource limitations. However, dedicated operational test and evaluation (OT&E) will not be based exclusively on computer modeling, simulation, or an analysis of information contained in program documents.

2.1.8. Incorporate appropriate intelligence information into T&E planning to accurately portray threat environments, capabilities, and vulnerabilities.

2.2. The Air Force will operate, maintain, and improve T&E facilities, including the Major Range and Test Facility Base and USAF Test Pilot School, in support of Air Force, DoD, and other user requirements. The Air Force will continually evaluate test infrastructure requirements and capabilities to ensure critical test infrastructure is available when needed, and avoid unnecessary duplication of test resources IAW DoDD 3200.11, *Major Range and Test Facility Base (MRTFB)*.

2.3. The Air Force will support the Office of the Secretary of Defense (OSD) sponsored Joint T&E (JT&E) Program through participation in all phases of the JT&E process IAW DoDI 5010.41, *Joint Test and Evaluation (JT&E) Program*.

2.4. The Air Force will maintain a Weapon System Evaluation Program (WSEP) for continuous evaluation of fielded weapon system capabilities.

3. Roles and Responsibilities. All Air Force T&E organizations must plan and conduct integrated T&E as an efficient continuum in collaboration with other program stakeholders. As such, the following organizational responsibilities are established.

3.1. The Director of Test and Evaluation (AF/TE) is the chief T&E advisor to Air Force senior leadership, responsible for developing T&E policy, establishing T&E guidance, advocating for test resources to support weapons system development, and resolving developmental and operational test programmatic issues. AF/TE is also designated the Air Force Foreign Materiel Program (FMP) Executive Agent. AF/TE:

3.1.1. Provides guidance, direction, and oversight for all matters pertaining to the formulation, review, and execution of T&E plans, policies, programs, and budgets.

3.1.2. Manages the Air Force test infrastructure to ensure adequate T&E facilities, resources, and expertise are available to support system life cycle T&E activities.

3.1.3. Establishes and, in cooperation with the Deputy Chief of Staff for Intelligence, Surveillance and Reconnaissance (AF/A2), implements the Air Force FMP to support the DoD FMP in accordance with DoDD S-3325.01, *Foreign Materiel Program (U)*.

3.2. The Assistant Secretary of the Air Force for Acquisition (SAF/AQ) is the Service Acquisition Executive. SAF/AQ:

3.2.1. Ensures T&E responsibilities are documented in system program documentation and carried out accordingly.

3.2.2. Ensures that all major defense acquisition programs (MDAP) and major automated information system (MAIS) programs are supported by a chief developmental tester (CDT) and by a lead developmental test and evaluation organization (LDTO).

3.3. The implementing major commands (MAJCOM), Air Force Materiel Command and Air Force Space Command:

3.3.1. Implement policies for developmental test and evaluation (DT&E) and manage the DT&E infrastructure.

3.3.2. Conduct required vulnerability, survivability, and lethality tests sufficiently early in the development phase of applicable programs to allow test results to inform system design prior to major production or modification decisions.

3.4. The Air Force Operational Test and Evaluation Center (AFOTEC) is established as the Department's independent operational test agency (OTA) reporting directly to the Air Force Chief of Staff IAW DoDD 5000.01. AFOTEC:

3.4.1. Plans, conducts, and reports on OT&E for MDAPs, programs on the OSD T&E Oversight List, and other high interest Air Force programs as directed.

3.4.2. Publishes reports on the results of these evaluations, and provide evaluations of each system's overall mission capability as determined by effectiveness, suitability, and other operational considerations.

3.5. Operational MAJCOMs:

3.5.1. Assist the implementing commands with maintaining test infrastructure to support the Air Force test enterprise.

3.5.2. Execute WSEP activities in a realistic operational environment to assess weapon system effectiveness, identify deficiencies, and recommend corrective actions.

DEBORAH L. JAMES
Secretary of the Air Force

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

10 U.S.C. § 139, *Director of Operational Test and Evaluation*

10 U.S.C. § 2366, *Major Systems and Munitions Programs: Survivability Testing and Lethality Testing Required Before Full-Scale Production*

DoDD 3200.11, *Major Range and Test Facility Base (MRTFB)*, 27 December 2007

DoDD S-3325.01, *Foreign Materiel Program (U)*, 30 December 2011

DoDD 5000.01, *The Defense Acquisition System*, 12 May 2003

DoDI 5000.02 Interim, *Operation of the Defense Acquisition System*, 26 November 2013

DoDI 5010.41, *Joint Test and Evaluation (JT&E) Program*, 12 September 2005

AFI 99-103, *Capabilities-Based Test and Evaluation*, 16 October 2013

AFMAN 33-363, *Management of Records*, 7 February 2013

Prescribed Forms.

No forms are prescribed by this publication.

Adopted forms.

AF Form 847, *Recommendation for Change of Publication*.

Abbreviations and Acronyms

AF/TE—Air Force Director of Test and Evaluation

AFMAN—Air Force Manual

AFMD—Air Force Mission Directive

AFOTEC—Air Force Operational Test and Evaluation Center

AFPD—Air Force Policy Directive

AFRIMS—Air Force Records Information Management System

CDT—Chief Developmental Tester

DoD—Department of Defense

DoDD—Department of Defense Directive

DoDI—Department of Defense Instruction

DT&E—Developmental Test and Evaluation

FMP—Foreign Materiel Program

IAW—in accordance with

ILCM—Integrated Life Cycle Management

IOT&E—Initial Operational Test and Evaluation
JT&E—Joint Test and Evaluation
LDTO—Lead Developmental Test and Evaluation Organization
LFT&E—Live Fire Test and Evaluation
MAIS—Major Automated Information System
MAJCOM—Major Command
MDAP—Major Defense Acquisition Program
MRTFB—Major Range and Test Facility Base
OPR—Office of Primary Responsibility
OSD—Office of the Secretary of Defense
OT&E—Operational Test and Evaluation
OTA—Operational Test Agency
RDS—Records Disposition Schedule
§—Section
SAF/AQ—Assistant Secretary of the Air Force (Acquisition)
T&E—Test and Evaluation
U.S.C.—United States Code
WSEP—Weapon System Evaluation Program

Terms

Developmental Test and Evaluation (DT&E)—Test and evaluation conducted to evaluate design approaches, validate analytical models, quantify contract technical performance and manufacturing quality, measure progress in system engineering design and development, minimize design risks, predict integrated system operational performance (effectiveness and suitability) in the intended environment, and identify system problems (or deficiencies) to allow for early and timely resolution. DT&E includes contractor testing and is conducted over the life of the system to support acquisition and sustainment efforts.

Integrated Testing—The collaborative planning and collaborative execution of test phases and events to provide shared data in support of independent analysis, evaluation and reporting by all stakeholders, particularly the developmental (both contractor and government) and operational test and evaluation communities.

Joint Test and Evaluation (JT&E)—An OSD-sponsored T&E program conducted among more than one military Service to provide T&E information on combat operations issues and concepts. JT&E does not support system acquisition.

Live Fire Test and Evaluation (LFT&E)—The firing of actual weapons (or surrogates if actual weapons are not available) at components, subsystems, sub-assemblies, and/or full-up, system-level targets or systems to examine personnel casualties, system vulnerabilities, or system

lethality; and the evaluation of the results of such testing. LFT&E is a statutory requirement for certain systems as described in 10 U.S.C. §2366.

Operational Test and Evaluation (OT&E)—1) The field test, under realistic combat conditions, of any item of (or key component of) weapons, equipment, or munitions for the purpose of determining the effectiveness and suitability of the weapons, equipment, or munitions for use in combat by typical military users; and the evaluation of the results of such test. (10 U.S.C. §139(a)(2)) 2) Testing and evaluation conducted in as realistic an operational environment as possible to estimate the prospective system's operational effectiveness, suitability, and operational capabilities. **Note:** There are several varieties of OT&E depending on the purpose of the testing.

Test and Evaluation (T&E)—The act of generating empirical data during the research, development or sustainment of systems, and the creation of information through analysis that is useful to technical personnel and decision makers for reducing design and acquisition risks. The process by which systems are measured against requirements and specifications, and the results analyzed so as to gauge progress and provide feedback.

Refer to AFI 99-103,—*Capabilities-Based Test and Evaluation*, for a complete list of T&E terms and definitions.